

What is claimed is:

1. A method comprising:
 - a) providing a metal plating composition with known amounts of components;
 - b) operating the metal plating composition to deposit a metal on a substrate;
 - c) analyzing an aliquot of the metal plating composition to determine an amount of an inert indicator component from the metal plating composition; and
 - d) correlating a change in the amount of the inert indicator component to a change in an amount of an inert metal plating composition component.
2. The method of claim 1, further comprising a step of adding to the metal plating composition an amount of inert metal plating composition component to restore the inert metal plating composition component to an initial concentration.
3. The method of claim 1, wherein the aliquot is analyzed periodically during metal plating.
4. The method of claim 1, wherein the inert indicator comprises an alkali metal ion, or an yttrium ion.
5. The method of claim 4, wherein the alkali metal ion comprises lithium, sodium, potassium, rubidium or cesium.
6. The method of claim 4, wherein the alkali metal ion or yttrium ion is in the electroless metal plating composition in an amount of from 1 ppb to 1000 ppm.
7. The method of claim 1, wherein the inert metal plating composition component is a chelating agent.
8. The method of claim 7, wherein the chelating agent comprises monocarboxylic acid, dicarboxylic acids, ammonia, borane salts, amino acid, monoamine, diamine, triamine, ethylenediaminetetracetic acid, N-(2-hydroxyethyl) ethylenediaminetriacetic acid, nitriloacetic acid, or mixtures thereof.
9. The method of claim 1, wherein the metal plating composition is an electroless metal plating composition or an electrolytic metal plating composition.
10. The method of claim 9, wherein the electroless metal plating composition is an electroless metal plating composition for plating copper, copper alloy, nickel, palladium, gold, silver, chromium, cobalt, lead, tin, cadmium, platinum, rhodium or zinc.
11. The method of claim 10, wherein the electroless metal plating composition is an electroless nickel plating composition comprising nickel hypophosphite.

12. The method of claim 9, where the electrolytic metal plating composition is an electrolytic metal plating composition for plating copper, copper alloy, nickel, palladium, gold, silver, chromium, cobalt, lead, tin, cadmium, platinum, rhodium, or zinc.